# EXHIBIT 2

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UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

SYNQOR, INC
Plaintiff Civil Action No.:
2:14-CV-286-MHS-CMC
v.
CISCO SYSTEMS, INC.,
Defendant
_______________________/

RULE 30(b)(6) VIDEOTAPED
DEPOSITION OF SYNQOR, INC.,
MARTIN SCHLECHT, Ph.D., DESIGNEE

Thursday, May 1, 2014, 9:03 a.m.
Wilmer Hale LLP
60 State Street
Boston, Massachusetts

Reporter: Deborah Roth, RPR/CSR
Job No.: 133024

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PRESENT:

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ALSO PRESENT: Ara Hollisian,
Legal Videographer

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I N D E X



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P R O C E E D I N G S

(Exhibits 1 and 2 were marked for identification.)

THE VIDEOGRAPHER: This is tape No. 1 to the videotaped deposition of Martin Schlecht, Ph.D., in the matter of SynQor Incorporated versus Cisco Systems Incorporated and Vicor Corporation, being heard before the United States District Court of Eastern Texas, Marshall Division. The case number is 2:11-cv-54.

This deposition is being held at the law offices of Wilmer Haler, 60 State Street, Boston, Massachusetts, on May 1st, 2014. The time is 9:03 a.m.

My name is Ara Hollisian, and I'm the videographer. The court reporter is Deb Roth of Esquire Deposition Solutions.

Counsel, will you please introduce yourselves and affiliations, and the witness will be sworn.

MR. TOMPROS: Louis Tompros and Rachel Weiner of Wilmer Hale on behalf of Cisco.

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MR. REIN: Thomas Rein from Sidley Austin on behalf of SynQor and the witness.
And I would just note that the case number has changed. It is now 2:14-cv-286.
MARTIN SCHLECHT, Ph.D.,
having been satisfactorily identified by the production of his Massachusetts driver's license, and duly sworn by the Notary Public, was examined and testified as follows:
EXAMINATION
BY MR. TOMPROS:
Q. Good morning, Dr. Schlecht.
A. Good morning.
Q. Are you presently under the influence of any alcohol, medication or drugs that would impair your ability to testify here today?
A. No, I'm not.
Q. And is there any other reason you can't give your best testimony here today?
A. No, there's not.
Q. Thank you.
Like the last time I took your deposition, I'm going to ask you questions. If there's anything about any of my questions

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that you don't understand, please let me know, okay?
A. I will. Although my answers, as I think I mentioned last time, will be based on my interpretation of your questions.
Q. Understood. Thank you.
You're still the chairman, chief executive officer and president of SynQor, right?
A. Yes.
Q. Dr. Schlecht, I've handed you exhibits marked 1 and 2. I'd like to start with Exhibit 1.
Do you have that document in front of you?
A. I do.
Q. Do you recognize it?
A. (Witness reviews document.)
Yes, I do.
Q. What is it?
A. It's the notice for this deposition, and among other things, a list of topics for this deposition.
Q. Did you review that notice in

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preparation for your testimony here today?
A. Yes, I did.
Q. And you are SynQor's designee to testify on the topics in this notice; is that right?
MR. REIN: Let me just specify. So it's clear. He's here subject to our objections.
MR. TOMPROS: Fair enough.
Q. And that's correct, Dr. Schlecht, you're here subject to SynQor's objections to testify on the topics in this notice?
A. Yes, I am.
Q. Can I ask you to look at Exhibit 2.
A. I have it.
Q. Do you recognize it?
A. Yes, I do.
Q. And what is Exhibit 2?
A. This is the '190 patent that's part of this lawsuit.
Q. Did you review it in preparation for your testimony here today?
A. Yes, I did.
Q. Can I ask you to look at claim 27 of

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the '190 patent, which begins on column 18.
A. I have it.
Q. Claim -- if you need to take time to review it, please feel free.
Claim 27 requires an isolation stage; is that right?
A. Yes.
Q. And the isolation stage of claim 27 includes a primary transformer winding circuit?
A. Yes. It comprises it.
Q. So does that -- the isolation stage of claim 27 must have at least one primary transformer winding circuit, correct?
A. Yes.
Q. The primary transformer winding circuit must have at least one primary winding, right?
A. Yes.
Q. The only place in claim 27 where there is a mention of a primary winding is in the primary winding -- excuse me. Let me say that again.
The only place in claim 27 where there is mention of a primary winding is in

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Q. Okay. SynQor is applying the Court's construction going forward in this litigation, right?
A. Yes.
Q. And does that construction apply to claim 28?
A. Well, it applies whenever the phrase "fixed duty cycle" appears.
Q. So in claim 28, the duty cycle of each primary winding in the isolation stage is not varied to control the output voltage towards a predefined value, true?
A. That would be the way to take the Court's construction for "fixed duty cycle" and read it into claim 28, yes.
Q. Can I ask you to look in Exhibit 3, the claim construction order, starting on Page 34.
A. I have it.
Q. And beginning on Page 34, there's a table of agreed claim terms and agreed constructions or structures.
Do you see that?
A. I do.
Q. This is a list of claim terms where --

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to which the parties agreed to a construction or a structure, right?
A. That's my understanding, yes.
Q. Can I ask you to look at the term and the construction for "regulation" at the bottom of Page 34 that goes onto Page 35.
A. I see it.
Q. That the regulation is "the act of controlling an output towards a predefined value," right?
A. Yes.
Q. And then continuing on, the next construction for "nonregulating" is "not controlling an output towards a predefined value," right?
A. That's correct.
Q. In claim 28, the isolation stage does not control an output toward a predefined value, correct?
MR. REIN: I object to form.
A. Not -- no. I don't -- I don't quite understand the connection you're making.
Q. The output -- the isolation stage has a fixed duty cycle for each primary transformer

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winding, right?
A. Correct.
Q. And under the Court's construction of a fixed duty cycle, the duty cycle is not varied to control an output toward a pre -- an output voltage towards a predefined value, right?
A. Yes. And let's be specific.
The duty cycle of the voltage waveform across the primary winding is not varied to control the output voltage towards a predefined value.
Q. So the duty cycle is not varied to regulate in claim 28?
MR. REIN: I object to form.
A. The duty cycle of the voltage across the primary winding is not varied to regulate the output voltage.
Q. So can claim 28 encompass a converter that regulates in the isolation stage?
A. Yes, it can.
Q. How?
A. Well, for example, in the specification, if we turn to column 13.
Q. I'm with you.

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A. Starting, let's say, perhaps in the paragraph at line 24, and continuing onward, perhaps halfway through column 14, is a discussion of how the isolation stage can provide regulation through the use of the controlled rectifiers, and regulation provided in that manner would still be accomplished, even though the duty cycle of the voltage waveform across the primary winding is fixed.
Then there might be other examples that I could imagine if I saw a power circuit that might similarly achieve regulation even though the duty cycle of the primary winding voltage was fixed.
Q. The controlled rectifiers -- in the example that you've identified in columns 13 and 14, how are the controlled rectifiers controlled?
A. Well, first, let me describe how it is they -- I'm not quite sure what you mean by how they are controlled. How they achieve their function of regulation?
Q. Let's start with that. How they achieve their function.

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A. The -- as the specification in this area describes, the voltage drop across the controlled rectifier is typically small, and there's not a number here, but let's imagine .1 volts when it's carrying current. Whereas the voltage drop across the uncontrolled rectifier is larger than that. Let's say one volt.

And so there are two different schemes proposed here in column 13 and 14 about achieving a regulation within the range of the on-state voltage of the controlled rectifier versus the on-state voltage of the uncontrolled rectifier.

One scheme, the first one discussed, suggests when we turn on the controlled rectifier, you don't turn it on all the way, or if you will, control the on-state resistance of the that controlled rectifier so that its voltage drop under that condition is something larger than its minimum voltage drop.

And, of course, you can, therefore, control the on-state voltage of the controlled

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rectifier anywhere from its lowest value up until you get to the voltage drop across the controlled rectifier in my example, about one volt, beyond which the current would instead flow through the uncontrolled rectifier, the diode.

That's one scheme, and in terms of how you would implement it, besides being discussed in the text, there's also reference to figure 8 showing a control circuit that does that.

Then, perhaps in column 14, there is a different approach which achieves the same concept here of controlling the average voltage drop across the rectifier by controlling what portion of the half cycle the controlled rectifier is on versus off.

So we take a given half cycle when a controlled rectifier might otherwise be on during the entire time. Here in the spec it suggests instead of having that controlled rectifier on for only a portion of that time, and then having the uncontrolled rectifier, the diode carry the current for the other

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portion, which -- having two different ways discussed.

One is to start with the controlled rectifier being on. The other is to finish with the controlled rectifier being on. But the concept here is that the average voltage drop across the rectifier would depend on the percentage of time the controlled rectifier was on versus the uncontrolled rectifier was on.

And, similarly, as discussed for the previous one, you would sense the output voltage and implement a control circuit to vary this percentage of time to provide regulation.

Q. Let's start with the first example in which you're varying the -- as I understand it, you're varying the amount of current -- excuse me, the amount of voltage drop within the controlled rectifier itself.

Is that the first example?

A. Yes. You are, I think at least in the example that I have given here, you're sensing the output voltage, comparing it to a desired

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value, and affecting the voltage you apply to the gates of the MOSFET transistor that's -- whose channel is the controlled rectifier here, and the feedback loop, in effect, you're controlling the effective drop, voltage drop across the controlled rectifier.

Q. By controlling the effective voltage drop across the controlled rectifier, what impact will that have on the output voltage of the circuit?

A. In that context of the circuit in which this is applied, if we hold all other things constant, the larger the voltage drop across the controlled rectifier, the lower the output voltage would be and vice versa.

Q. And at some point the uncontrolled rectifier -- the threshold of the controlled rectifier will be reached such that the uncontrolled rectifier is passing the voltage; isn't that correct?

A. The question wasn't really formed technically.

Q. I agree.

But at some point the controlled

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rectifier reaches a threshold at which the uncontrolled rectifier takes over control of the circuit, right?
A. The question is not well formed technically.
At some point the voltage drop across the controlled rectifier will be such that current starts to flow in the uncontrolled rectifier, and, maybe, to be precise, there will always be some in the uncontrolled rectifier, but more and more of it will flow into the uncontrolled rectifier, and the uncontrolled rectifier will then dictate the voltage drop across the net rectifier.
Q. Using this scheme, how much of a difference in the voltage drop across the net rectifier can be accomplished?
A. The actual numbers depend on actual devices here and actual situations, but as I gave as an example, let's say the uncontrolled rectifier might have a drop of one volt. So the largest voltage drop across the rectifier might be one volt in my example.

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And then the controlled rectifier, you know, I mentioned before .1 volt. It might smaller than that, but that would suggest the lower limit.
And so the range of regulation control would be between those two numbers, between .1 and 1.0 in my example.
Q. So if you had a predefined output voltage of 12 volts, you could regulate to that output voltage if the input were within the volts of that output?
A. No. The input voltage, of course, is on the other side of the transformer, and there's a turns ratio. So that wouldn't be correct.
Q. Okay. If you had a predefined output voltage of 12 volts and a turns ratio of five to one, you could regulate to that 12 volts as long as the input voltage were 60 volts, plus or minus one volt; is that right?
A. In your example, where the range of capability on the secondary side, capability of regulation is .9 volts, with the turns ratio of five, then I would expect to be able

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to handle a four and a half volt range.
Q. Okay.
A. Now, then I'd perhaps then deal with other resistive drops through the circuit that would narrow that range a little bit, but there would be a limited range of the input voltage over which I -- which the circuit using this technique could provide regulation; and then beyond that range, on one end or the other, the isolation stage would revert back to a nonregulating isolation stage.
Q. Let's focus down on the second technique in column 14, where you adjust the percentage of time the controlled rectifier is on.
Using that technique, what is the range of potential impacts on output voltage?
A. It would be the same range.
Here now there would be a step change between the .1 volts and one volt in my example with numbers over the course of each half cycle, and then there's the understanding that that would -- that step change would be filtered so that you would see the average,

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and now you can control that average by controlling the percentage of time the controlled rectifier is on between zero and a hundred percent of the half cycle, so that you could achieve anything, again, between the lowest voltage drop across the controlled rectifier to the voltage drop across the uncontrolled rectifier.
Q. Okay. Using either of these techniques, the adjustment of the percentage of time that the controlled rectifier is on, or the adjustment of the voltage through the controlled rectifier requires sensing the output voltage and providing feedback to a control circuitry that adjusts either percentage of time or voltage; is that right?
A. In terms of your question, I don't know that it's required.
The example that I give here is to regulate the output voltage over the range for which it's possible; and, of course, to regulate the output voltage, I'm going to sense the output voltages and use it to adjust either the on-state voltage of the controlled

rectifier or the percentage of time.
You know, I suppose if you're not trying to regulate the output voltage, you could do something else.
Q. You also mention figure 8 in connection with one or both of these examples.
If you turn to figure 8.
A. I have it.
Q. Can you explain what figure 8 shows relative to either or both of the examples that you previously described?
A. Figure 8 is an example of how to implement the first of the two schemes that I mentioned, that of controlling the voltage drop across the controlled rectifier.
And as the specification describes, essentially what you want to do is be in control of what voltage you apply to the gate of this MOSFET when it's going to be on, and the way that's accomplished is to use another technique, another invention of this patent, which is the capacitor divider idea.
So you'll see in this figure there's capacitor dividers between point A and the



gate of controlled rectifier Q4, comprised of capacitor C5 and C4, and that capacitor divider provides the right waveshape and form to the gate drive, but leaves us free to decide what the DC value of that gate voltage will be, the average value will be.
And then the control circuit you see here of the op amp and sensing the output and comparing it to a reference, its whole purpose is to control that DC value of the waveform. So that when the actual waveform goes high, meaning turning on the controlled rectifier, you can control how high it goes.
Q. In the context of figure 8, the op amp compares the output voltage to a reference voltage indicated as Vref?
A. Correct.
Q. It accomplishes the control by virtue of making that comparison; is that right?
A. I mean it compares the two, detects the error between the two, and then it drives the average voltage of the gate voltage to the point where the error will be driven to zero or towards zero.



In other words, it drives the output voltage toward a predefined value, as long as it has the capability of doing that. As long as it's -- if conditions are such that it's within the range of the possibility for the controlled rectifier to have an effect on the output voltage.
Q. Okay. Can I ask you to look at the cover of the '190 patent.
A. Yes.
Q. And just confirm for me the filing date is March 29th, 2004.
A. Yes.
Q. I'd like to look a little bit at the prosecution history of the original patent with you?
(Exhibit 4 was marked for identification.)
Q. Dr. Schlecht, you've been handed what's been marked as Exhibit 4. It's a multiple page document. On the front page, it says "Utility Patent Application Transmittal." Then the version I've given you has a series of red tabs on those.



Do you see those?
A. I do.
Q. I marked the tabs just because this is an unpaginated document. I want to be able to jump to certain pages, but I want to start at the beginning, okay?
A. All right.
Q. Let me ask you first if you have reviewed the prosecution history of the '190 patent previously?
MR. REIN: I object to form.
A. I've reviewed various portion of the prosecution history as time has gone by.
Q. Okay. Let's look at this first page of Exhibit 4. Do you see the date at the bottom 3/29/04?
A. I do.
Q. That's the same as the filing date of the '190 patent, right?
A. Correct.
Q. And if you look at the second page, Page 2, that same date, 3/29/04, appears, right?
A. Yes, it does.